

AMENDMENTS TO THE SPECIFICATION:

Please amend the first paragraph of this application as follows:

This application is based upon a divisional of Application No. 10/144,028, filed May 14, 2002, which is a divisional of Application No. 09/669,725, filed on September 26, 2000, now U.S. Patent No. 6,410,080, and claims the benefit of priority from the prior Japanese Patent Applications Application No. 11-272327, filed September 27, 1999, and No. 2000-255461, filed August 25, 2000, the entire contents of which are incorporated herein by reference.

On page 28, please replace the paragraph beginning on line 8 with the following new paragraph:

The step end portion of the substrate will be described, referring to FIG. 15. As shown in FIG. 15, in the case that an undercoat film 152 and an antireflection film 153 are made on a Si wafer 151, step end portions are an end of the Si wafer 151, a level-differentiating difference portion between the Si wafer 151 and the undercoat film 152, and ends of the undercoat film 152 and the antireflection film 153. In the case that a liquid film is formed on an undercoat having unevenness, a level-differentiating portion between the outmost portion of the undercoat film and a film outside it or a substrate is defined as a step end portion 155.

On page 29, please replace the paragraph beginning on line 20 with the following new paragraph:

FIG. 17 is a sectional view of the state of that a resist is applied onto the resist dropping area R in the substrate of the present embodiment. In FIG. 17, a resist formed by

a conventional method is simultaneously shown for reference. FIG. 17 shows a dropping start position 101a and a dropping finish position 101b according to an embodiment. FIG. 17 shows a dropping start position 102a and a dropping finish position 102b according to a conventional method. The sectional view shown in FIG. 17 corresponds to a section taken along A-A' line of FIG. 16.

On page 30, please replace the paragraph beginning on line 7 with the following new paragraph:

The distribution of thickness of the formed resist film was measure in an optical manner. FIGS. ~~[[18A]]~~ 19A and ~~[[18B]]~~ 19B are view each of which shows a distribution of the film thickness. FIG. ~~[[19]]~~ 18 shows positions where the distribution of the film thickness was measured. FIG. ~~[[18A]]~~ 19A shows the distribution of the film thickness T₁ according to the present invention along the X-X' line of FIG. ~~[[19]]~~ 18, and FIG. ~~[[18B]]~~ 19B shows the distributions of the film thickness along the Y1-Y1' and Y2-Y2' lines. In FIG. 19B, Y₁ represents the distribution of thickness of the application film according to the present invention. FIGS. ~~[[18A]]~~ 19A and ~~[[18B]]~~ 19B also show a distribution of thickness of an application film formed by a conventional method T₂ and Y₂ in which the distance between the end of a liquid film and the end of a substrate was constantly set to 2 mm over positions from an application start side to an application finish side.

On page 31, please replace the paragraph beginning on line 21 with the following new paragraph:

Stand-by time until the drying process is longer at the application start side than at the application finish side. Thus, the flowing distance of the liquid becomes longer accordingly. In the case that at this time the distance up to the end of the substrate is

smaller than the flowing distance d_1 , the flow of the liquid is stopped at the end of the substrate 11 shown at S_1 so that the thickness of the liquid film 13 increases with subsequent flow of the liquid, as shown in FIGS. 20A and 20B.

On page 32, please replace the paragraph beginning on line 4 with the following new paragraph:

On the other hand, the liquid is subjected to the given drying processing at the application finish side immediately after the formation of the liquid film, so that the flowing distance Df_1 becomes smaller at this side than at the application start side. In the case that at this time the distance up to the end of the substrate is larger than the distance of flow, the thickness of the liquid film gently becomes thinner toward the end of the liquid film at a given surface contact angle as shown in FIGS. 21A and 21B.

On page 32, please replace the paragraph beginning on line 20 and continues on page 32 with the following new paragraph:

On the other hand, as in the present embodiment, in the case that considering the fluidity of the liquid after being dropped, the distance between the end of the substrate and the end of the liquid film is changed over positions from the dropping start side to the dropping finish side in the manner that the end of the dried liquid film just reaches the end of the substrate, it is possible to realize a symmetric and uniform distribution of the thickness of the applied film over all peripheral portions of the substrate. When the liquid film reaches the end of the substrate 11, the contact angle of the end of the liquid film 13, shown at 201, becomes large (for example, $\theta_1 \rightarrow \theta_2$) shown at 202, as shown in FIG. 22. In this case, therefore, the liquid film comes to have a steeper edge than the case that the liquid film does not reach the end of the substrate 11, as shown in FIG. 22.

On page 36, please replace the paragraph beginning on line 6 with the following new paragraph:

As shown in FIG. 24, in the distribution of the thickness of the application film formed from the liquid film 30 μm in thickness by the conventional method shown with the broken line, the film thickness increased highly at the application start side and the film thickness decreased gently at the application finish side. The reason why such a distribution of the film thickness is produced is that the liquid film flows during the time from the formation of the liquid film to the drying processing.

On page 36, please replace the paragraph beginning on line 15 with the following new paragraph:

The following will describe the relationship between thickness of the liquid film and fluidity thereof according to a conventional film forming method and the film forming method of the present embodiment with reference to FIGS. 25A and 25B. As shown in FIGS. 25A and 25B T_t represents a target thickness of the liquid film. FIG. 25A is a view for explaining this relationship according to the conventional film forming method. FIG. 25B is a view for explaining this relationship according to the film forming method of the present embodiment.

On page 36, please replace the paragraph beginning on line 24 and continued to page 37 with the following new paragraph:

In the case that the thickness of the liquid film was 30 μm by the conventional method, the thickness was larger than the thickness that the substrate could keep as shown in FIG. 25A when the liquid was dropped to form the liquid film. Therefore, flow was remarkably caused. In the state that such flow is easily caused, the liquid film is easily

affected by environment at the time of the application. As shown in FIG. 25A, when the pitch p is made small to make the thickness of the liquid film large, the liquid film flows. Thus, control of the film thickness at the center of the substrate becomes difficult, and uniformity deteriorates.

On page 37, please replace the paragraph beginning on line 7 with the following new paragraph:

On the other hand, when the liquid film is made thinner to have a thickness of 20 μm or 15 μm as in the present invention shown with solid lines in FIG. 24, the liquid film is easily kept on the substrate by surface tension of the liquid as shown in FIG. 25B. As shown in FIGS. 25B, when the pitch p is made large to make the thickness of the liquid film small, the liquid film balances with interfacial tension with the substrate so that the film does not move. Thus, when the liquid film is formed, flow is easily caused. Accordingly, abnormality of the film thickness at the peripheral portion of the substrate (in particular application start and finish portions), which is caused by flow, is overcome. Furthermore, the flow of the liquid is not easily caused even if the liquid is affected by external environmental factors in the application and drying steps. As a result, uniformity becomes good.